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MANAGERS WOULD ALLOW SUCH CLASS VISITS, COULD INDICATE THE VERY REAL POTENTIAL OF CEMETERIES FOR THIS PURPOSE.

Future Use of Cemeteries

According to Forest Service researchers Dixon and Thomas, developing a plan for future use of cemeteries is necessary to assure that incompatible activities are excluded, while compatible ones are accommodated, thus avoiding conflict. Choices need to be made, based on age of the cemetery, ownership or control, layout of the grounds, and amount and type of vegetation present.

This study has shown that it is not a question of whether or not to use cemeteries for recreational activity. They are already in such use, and as green, open, and relatively inviolate spaces in the midst of the burgeoning city, pressures for other areas will multiply.

The environmental researchers plan to go on to develop management programs for nature study areas in cemeteries and to develop lesson plans and educational materials for teachers and students to use on their cemetery outings in the future.

The researchers caution that many of the findings from their Boston cemetery study, while relevant to other metropolitan areas, may not be applicable everywhere. While nationally it has been reported that about 2 million acres of land are designed as interment facilities, many of these lands will not be usable for other purposes, because of local traditions and laws, or because of the availability of other more suitable green spaces.

This research does not take an advocate positon. It merely points to "what is", and then asks "what if?" and "why not?".

Photos by Ronald A. Dixon

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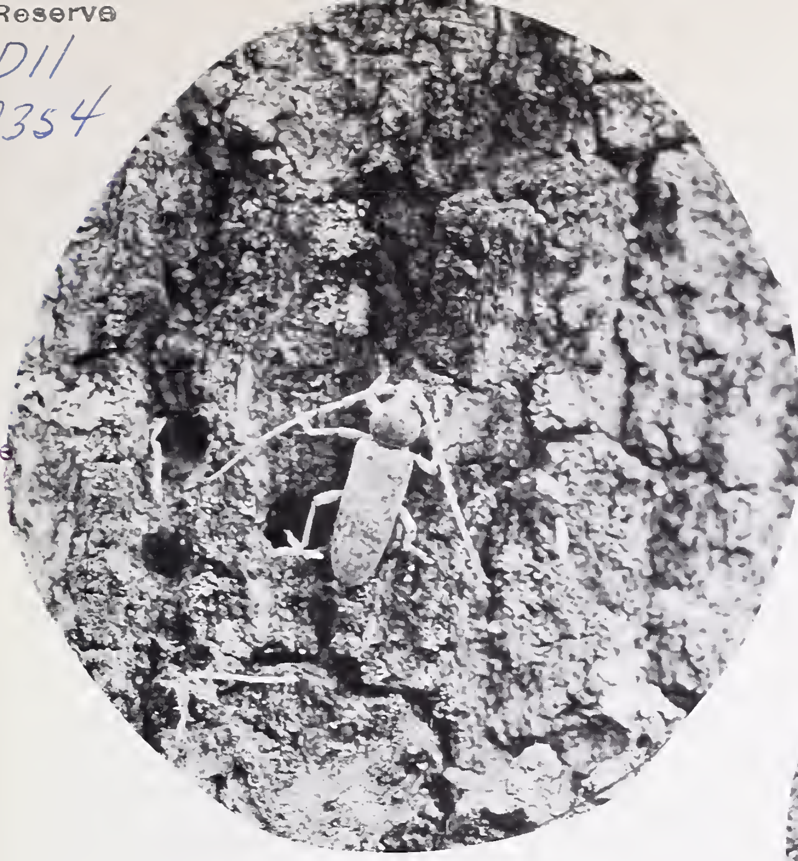

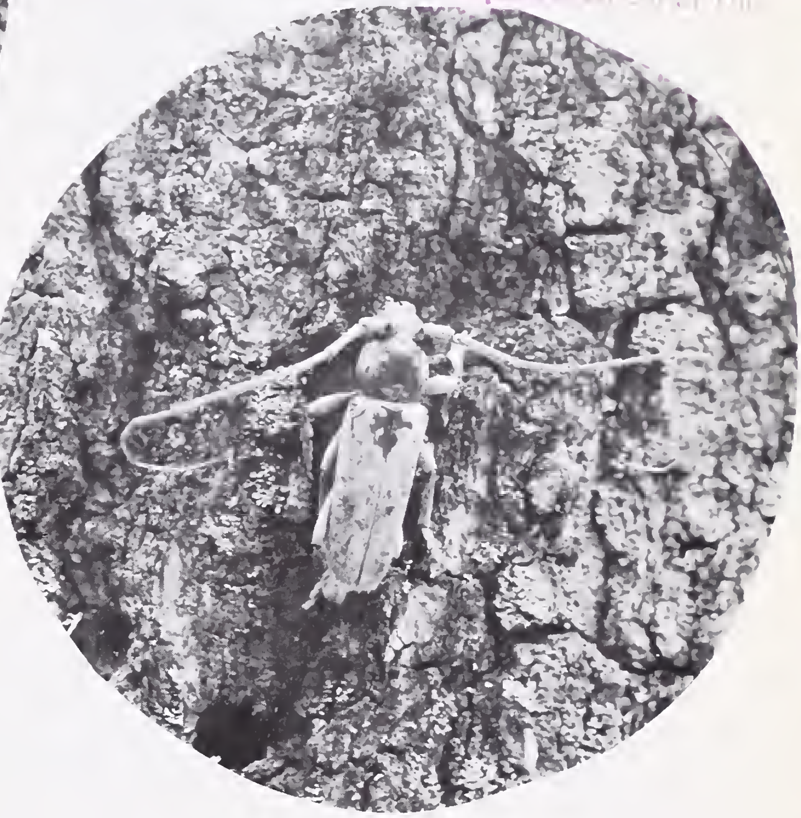

The oak borer presents a serious problem in oak forests. The female borer is on the left; the male, on the right.

FOREST ENTOMOLOGISTS FIELD TEST TECHNIQUE TO CONTROL BORERS

The oak borer is an elusive, yet devastating critter. Although seldom seen, it does considerable damage to the wood inside red, black, scarlet, and white oak trees, according to Forest Service entomologists, who recently completed cooperative research work with mill operators in the Central Appalachian oak forests.

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NORTHEASTERN FOREST EXPERIMENT STATION • UPPER DARBY, PENNSYLVANIA 19082

A Forest Service technician points out indications of borer damage on the surface of an oak tree (above). Chipping away the bark of this same tree reveals further, more severe damage inside the tree (below).

In tunneling inside the tree, the oak borer leaves a maze of passage-ways that are still visible in the wood when it is harvested at some later date. This "wormy oak" is less valuable than wood from undamaged trees. In fact, throughout the three-state study area of Ohio, Kentucky, and West Virginia, the Forest Service entomologists found losses to oak lumber from this pest averaging $24 in every 1,000 board feet of lumber harvested. The seriousness of the problem can further be seen in the estimate that about 30% of all our red, black, scarlet, and white oaks are being degraded by borers.

The entomologists, who have been studying the oak borer for some time, maintain that forest managers could reduce this loss by applying a simple timber stand improvement technique that would double as a borer control measure wherever oak borers are found.

Discovering the presence of oak borers is tricky, because of the insect's elusive nature. For one thing, the borer is usually inside the tree and out of sight. And adult borers only come out of trees at night for a 3- to 4-week period every two years. But to decide whether his oaks have an ongoing borer problem, all a forester needs to do is set a light trap out in the woods at night. If, for example, he has 300 oaks per acre and catches 4 or more borers in his carefully placed trap, then he should undertake a control program.

Forest Service scientists at the Forest Insect and Disease Laboratory in Delaware, Ohio are presently field testing what appears to be a promising borer control program that they have developed at the Laboratory.

The scientists, David Donley, John Hay, and Jimmy Galford, aim to develop it into a set of practical measures that forest managers can apply in their effort to combat oak borers and to decrease accompanying tree value losses.

Their field studies are under way using some 14,000 trees on 40 acres of strip-mined forest land in Ohio. These test plots are good patches of trees that were left as undisturbed islands surrounded by strip-mine high walls. Not only are these forest patches in Ohio predominantly of oak, but they are also isolated from other sources of insects, which make them incomparable test sites for the Forest Service's oak borer studies. Some lands used for these studies belong to members of the Ohio Coal Association, and studies are being done with their cooperation.

The scientists began their field tests by laying out 3,4, and 5-acre plots in the various oak forest patches. They next canvassed these plots to locate every borer infested tree. They applied their borer control treatment, then will return to their plots periodically to reexamine every tree for evidence of borers. This study will continue until 1978.

Forest Service entomologists recently completed cooperative research studies with mill operators. Aided by a Northern Hardwood Lumber Association lumber grader, they established that oak borers do considerable damage inside red, black, scarlet, and white oak trees. The entomologists are presently field testing a simple and practical technique to control borers.

The control treatment the Forest Service scientists hope to verify was developed with information derived from their past research. Past studies had shown that up to 80% of all the borers on an acre of forest land inhabit no more than 15 trees at one time. This means that no more than 1% of the trees on a given acre of forest land are borer-ridden at any given time. These trees are called oak borer brood trees.

Now if these brood trees are identified, cut down, and disposed of, the scientists reason that the local borer problem should be much lessened. By this action, forest managers would also dispose of their damaged wood as a timber stand improvement measure, while disposing of borers inside the trees as a borer control measure. This would enable the manager to accomplish two beneficial results in one operation.

It takes about 75 years to produce a quality oak log. According to the scientists, there are key years during this time span when the application of the timber stand improvement-borer control technique would give the best economic results. The scientists estimate that when this method is applied to a 30-40 year old stand, it will probably give managers the most for their borer control dollar.

Economically speaking, about $60 is now being lost on each acre of oak forest land because of borers. This timber stand improvement method, coupled as it is with the borer control technique, should cost a mere $1.40 to $3.00 per acre to apply, and could increase the value of each acre of oak timber by $40. The method, if it tests out, will be simple, practical, and economical, to be sure. And findings will be usable throughout the Appalachians, where it could increase the value of oak trees already growing there by some $600 million over the next 30 years.